

PCS2309 – APP DEVELOPMENT

Experiment No.: 1

Date: / /2025

Title: Using react native, build a cross platform application for a BMI calculator.

Objective:

To create a cross-platform mobile application using React Native that calculates and displays the Body Mass Index (BMI) based on the user's input height and weight.

Software/Hardware Requirements:

- Visual Studio Code (VS Code)
- Node.js
- npm (Node Packet Manager)
- Java Development Kit (JDK)
- React Native
- Android SDK

Pre-requisite Knowledge:

- Basic JavaScript Programming
- Fundamentals of React
- React Native Basics
- Development Tools & CLI

Theory / Concept Overview:

BMI (Body Mass Index) is a health metric that evaluates whether a person has a healthy weight for their height. It is calculated using the formula:

$$\text{BMI} = \frac{\text{Weight (kg)}}{(\text{Height (m)})^2}$$

It classifies a person as:

- **Underweight:** $\text{BMI} < 18.5$
 - **Normal weight:** $18.5 \leq \text{BMI} < 24.9$
 - **Overweight:** $25 \leq \text{BMI} < 29.9$
 - **Obese:** $\text{BMI} \geq 30$
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Problem Statement:

To design and develop a cross-platform mobile application using React Native that calculates and displays a user's Body Mass Index (BMI) based on their height and weight inputs.

Algorithm / Logic:

Start

Read weight (in kilograms)

Read height (in meters)

Calculate BMI using the formula:

$BMI = \text{weight} / (\text{height} * \text{height})$

Display the BMI

Categorize BMI based on standard ranges:

- If $BMI < 18.5 \rightarrow$ Underweight
- If $18.5 \leq BMI < 24.9 \rightarrow$ Normal weight
- If $25 \leq BMI < 29.9 \rightarrow$ Overweight
- If $BMI \geq 30 \rightarrow$ Obese

Display the category

Sample Input/Output:

The image displays three sequential screenshots of a mobile application titled "BMI Calculator". Each screenshot shows the same interface with input fields for Height (in cm) and Weight (in kg), a Gender dropdown menu, a green "Calculate BMI" button, and a display area for the calculated BMI and its category.

- Screenshot 1 (Left):** Height is 157 cm, Weight is 40 kg, Gender is Male. The calculated BMI is 16.23, and the category is "Underweight".
- Screenshot 2 (Middle):** Height is 157 cm, Weight is 70 kg, Gender is Female. The calculated BMI is 28.40, and the category is "Overweight".
- Screenshot 3 (Right):** Height is 157 cm, Weight is 59 kg, Gender is Female. The calculated BMI is 23.94, and the category is "Normal weight".

Result:

The application was successfully developed using React to calculate the Body Mass Index (BMI) based on the user's height and weight inputs. The app displays the calculated BMI value along with its corresponding category.

Viva Questions:

1. What is the purpose of the `useState` hook?
2. How do you display the BMI result on the screen?
3. How does React handle state management for user inputs like height and weight?

Grade / Marks: _____

Signature: _____